



Draft Statewide Rail Plan



Overview

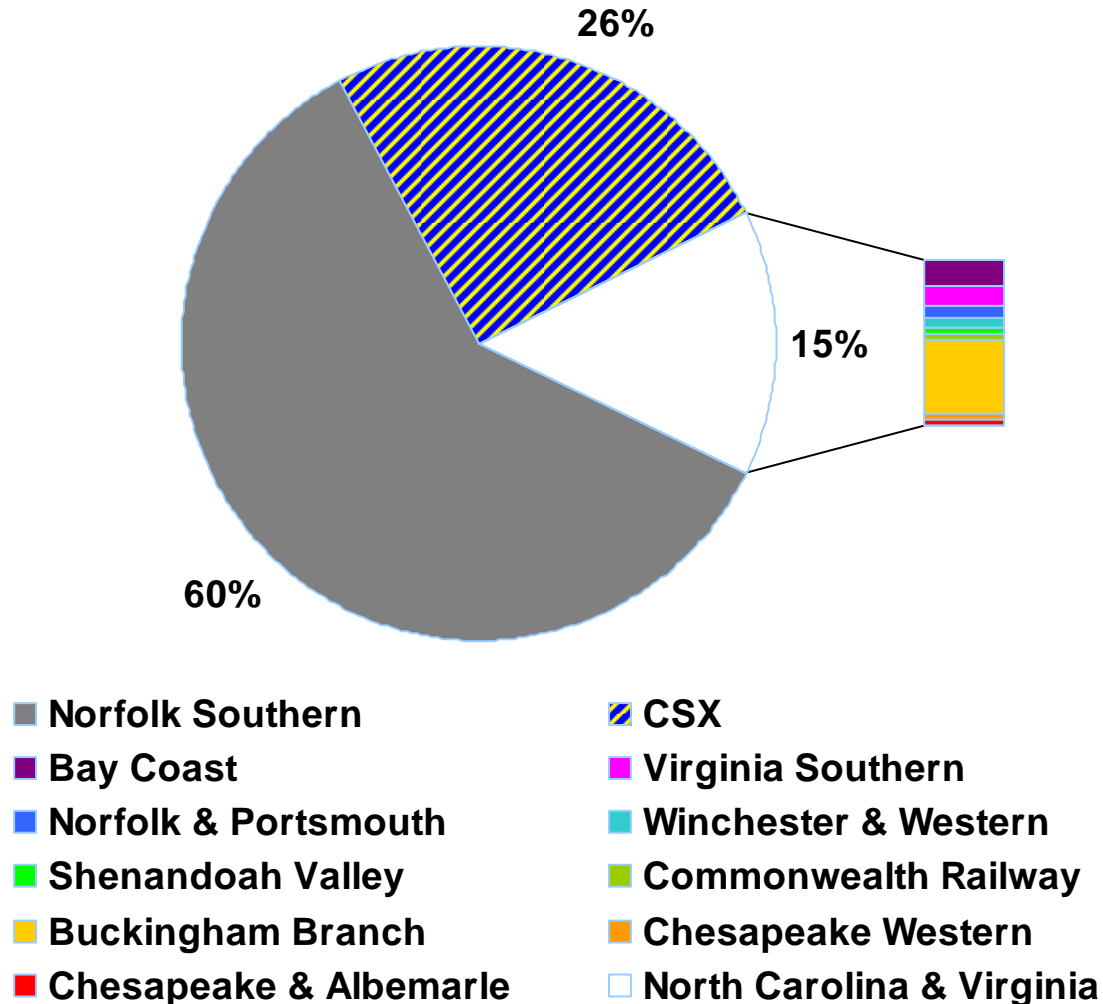
- ☐ Virginia Rail System
- ☐ Setting the Stage
- ☐ Rail Benefits
- ☐ Proposed Improvements
- ☐ Cost Assumptions
- ☐ Class I and Shortline Railroads
- ☐ Port Projects
- ☐ Passenger Rail Initiatives
- ☐ High Speed Rail
- ☐ Total Project Benefits
- ☐ Funding
- ☐ Next Steps

Virginia Rail System

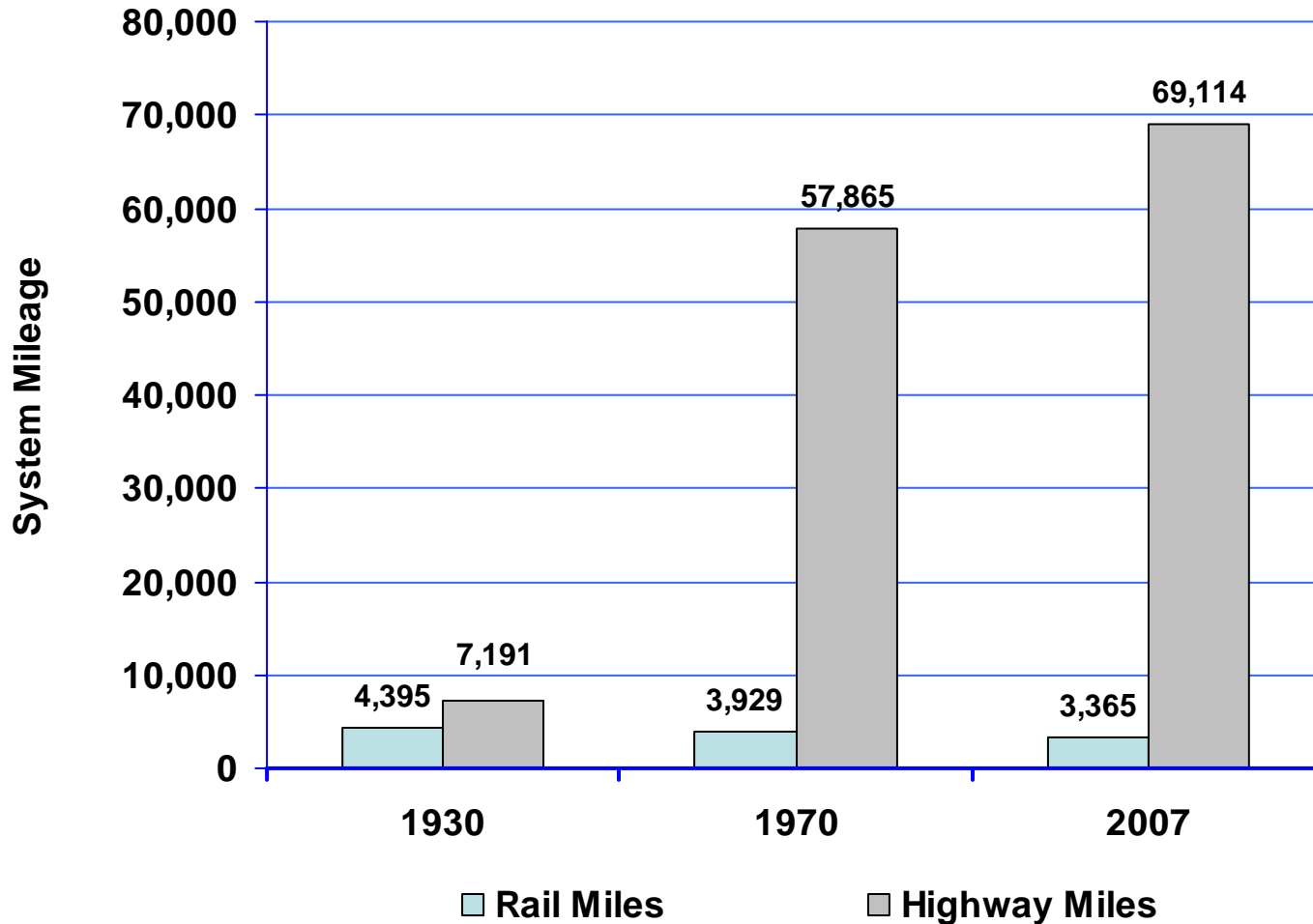


- Two passenger rail operators – Amtrak and Virginia Railway Express
- Twelve freight railroads –
 - Two national Class I Railroads: Norfolk Southern and CSX
 - Ten local shortline railroads

Virginia's Current Rail System Privately-Owned by Freight Railroads

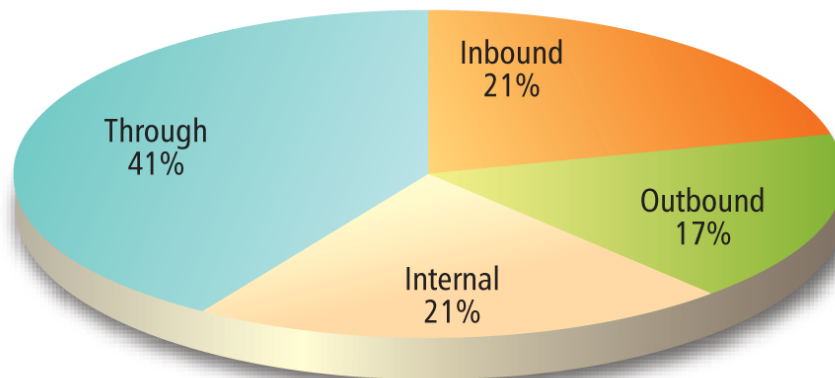
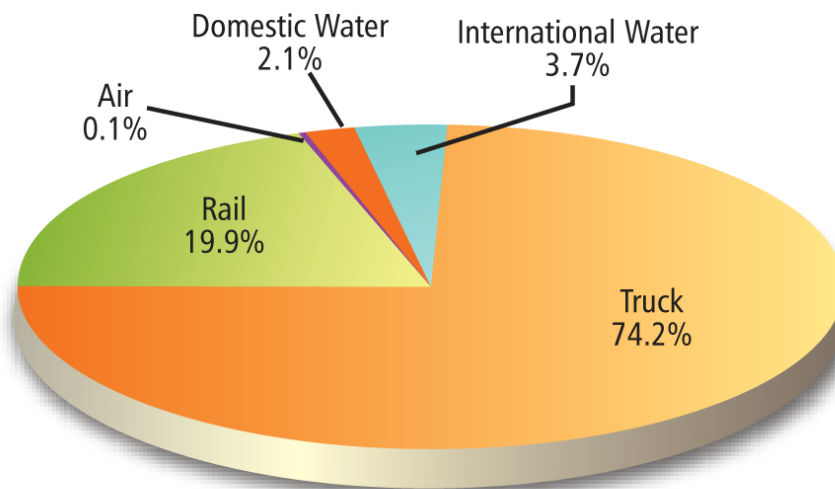


Virginia Highway and Rail Miles

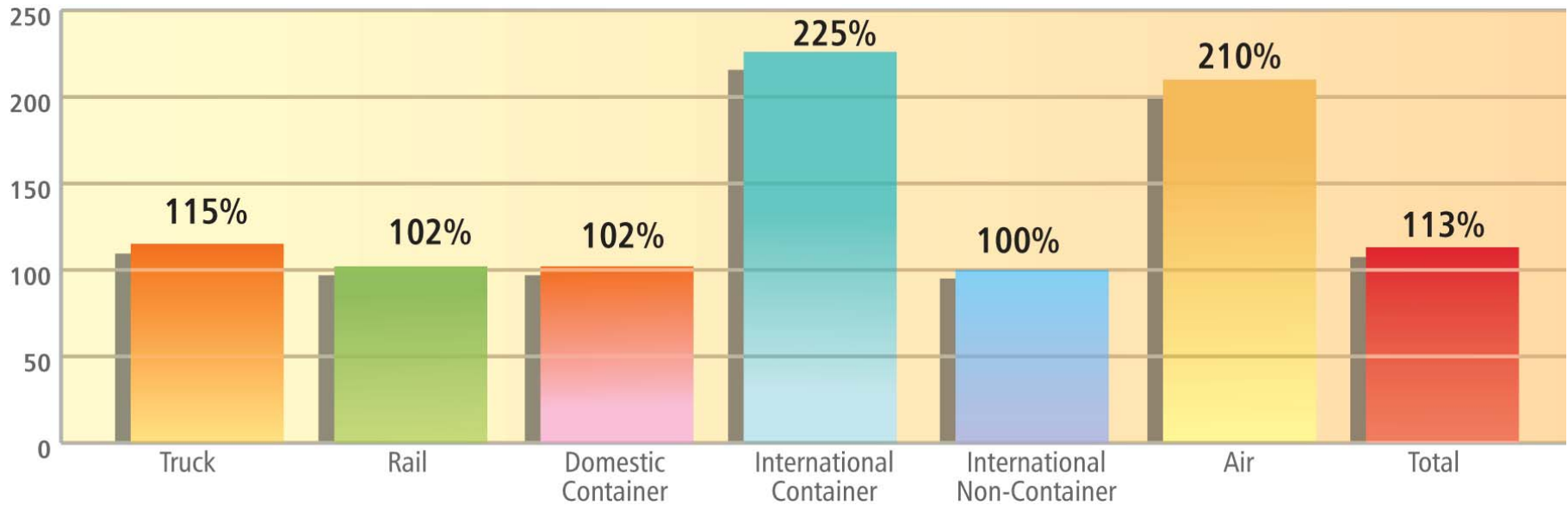


Forecast Year:

Virginia Freight Tonnage by Mode and Direction (2004)

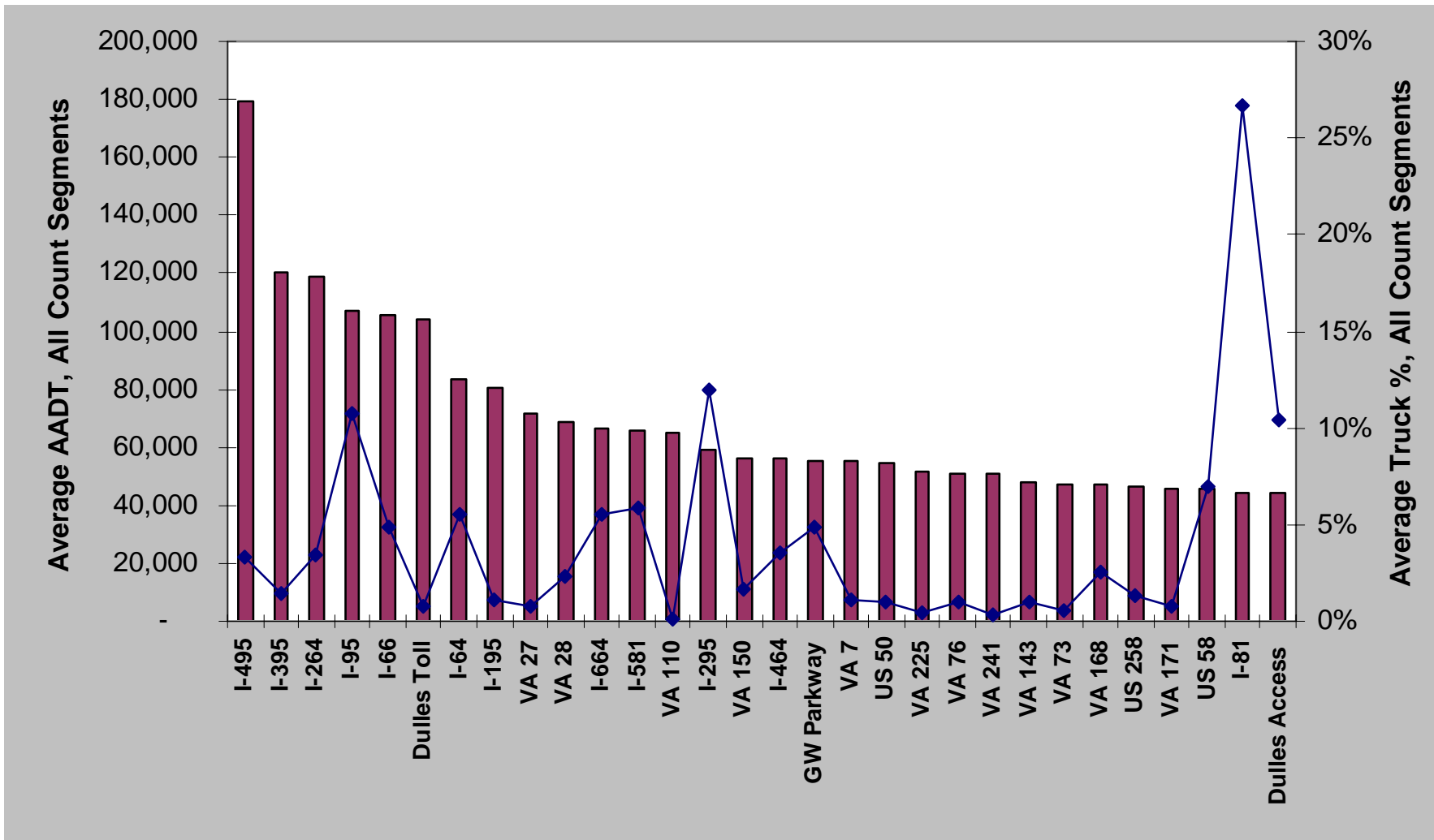


Projected Virginia Freight by Mode (2035)

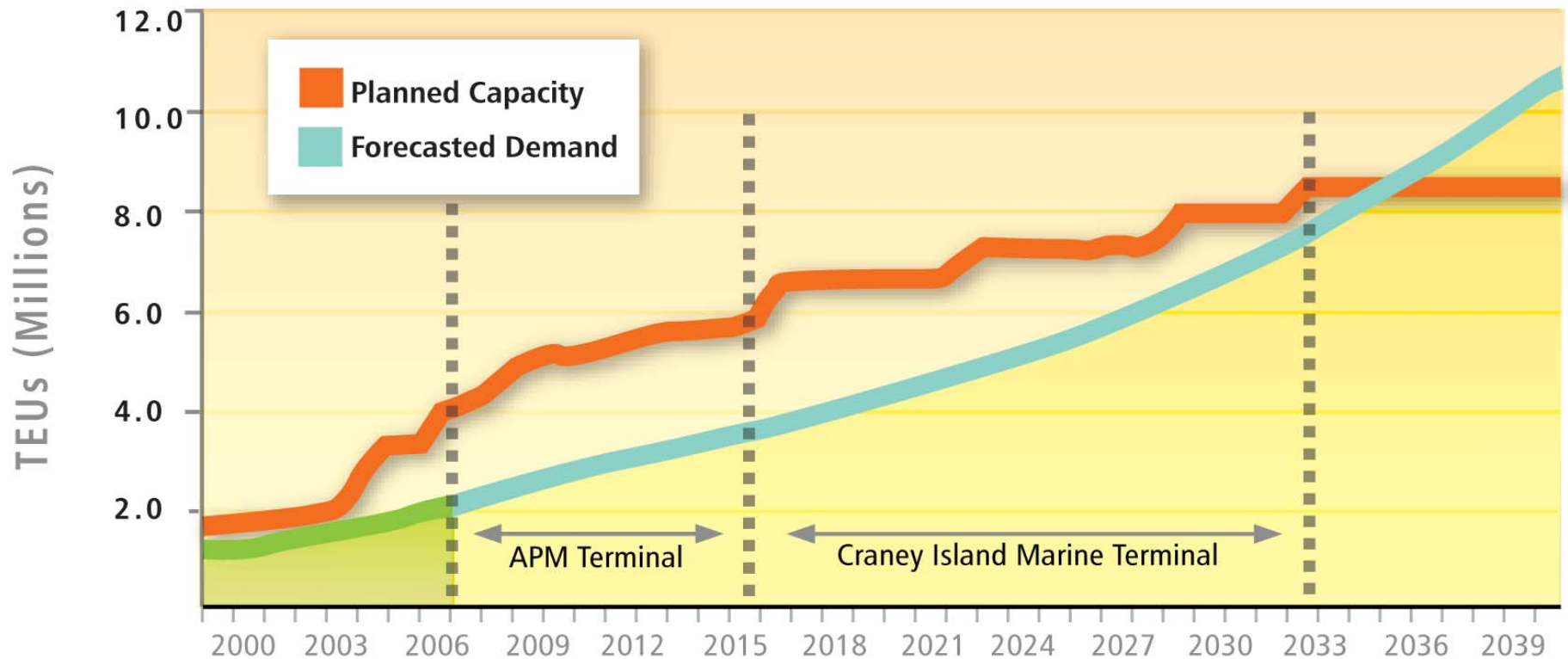


Average Total AADT and Truck Percentages

All count Segments – top 30 Routes (2005)

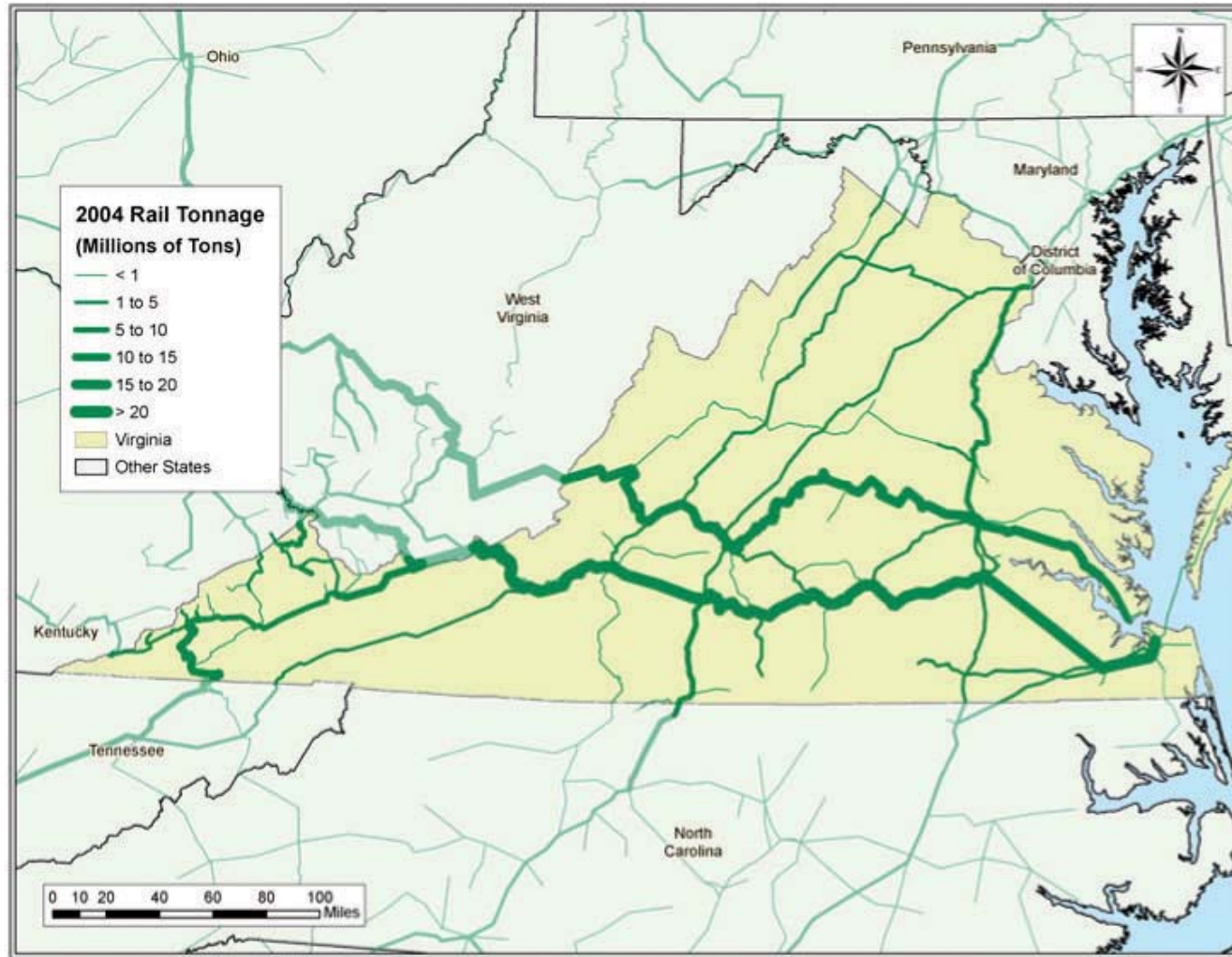


Increase of Containerized Cargo (TEUs) Virginia Ports

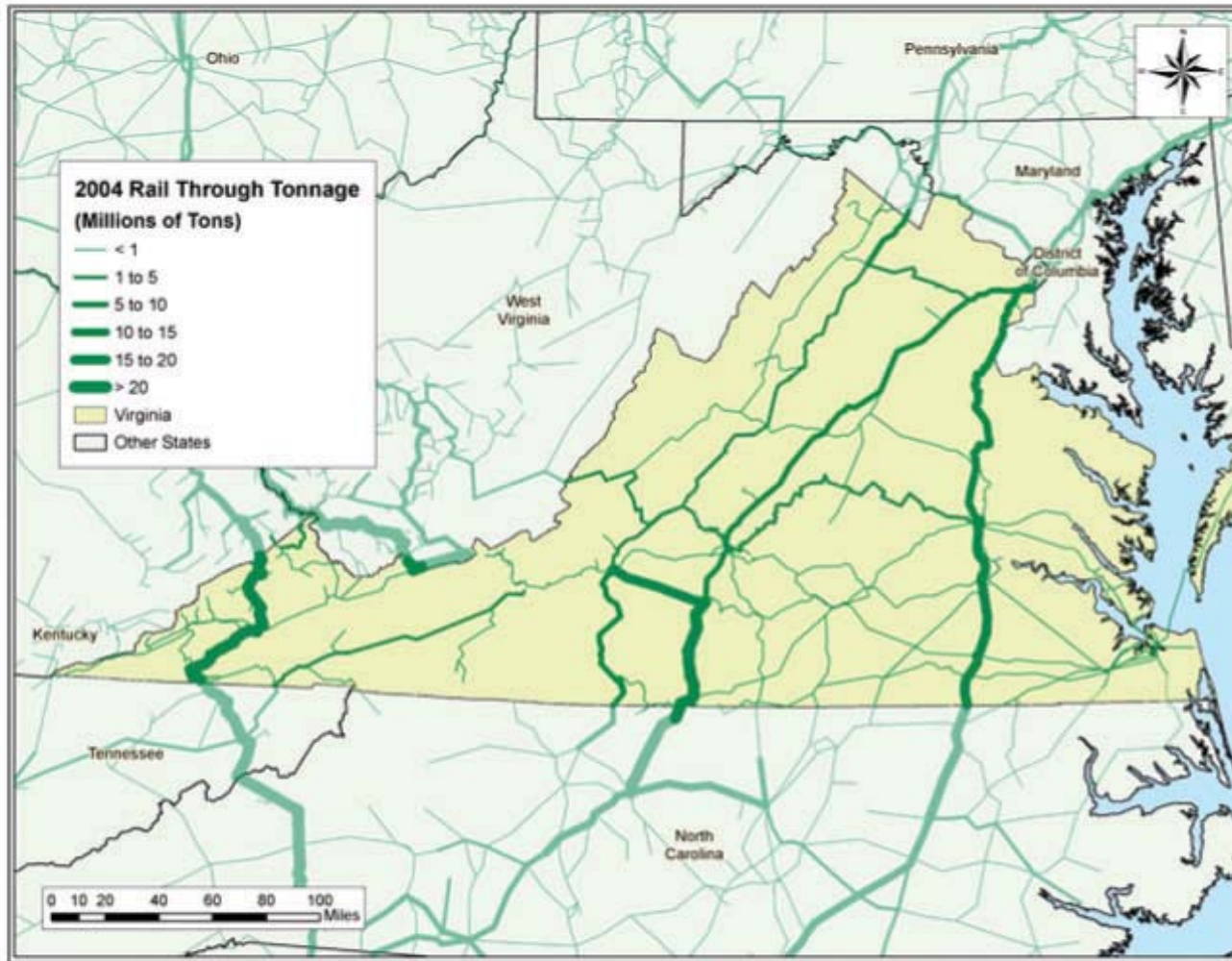


Forecast Year: 2006

Virginia Rail Tonnage (2004)



Rail Tonnage Passing Through Virginia (2004)



Percentage of Freight Rail Tonnage (2005)



Unit Train 60%

Long trains of a single railcar type and product, like coal -- mostly east-west



Carload 24%

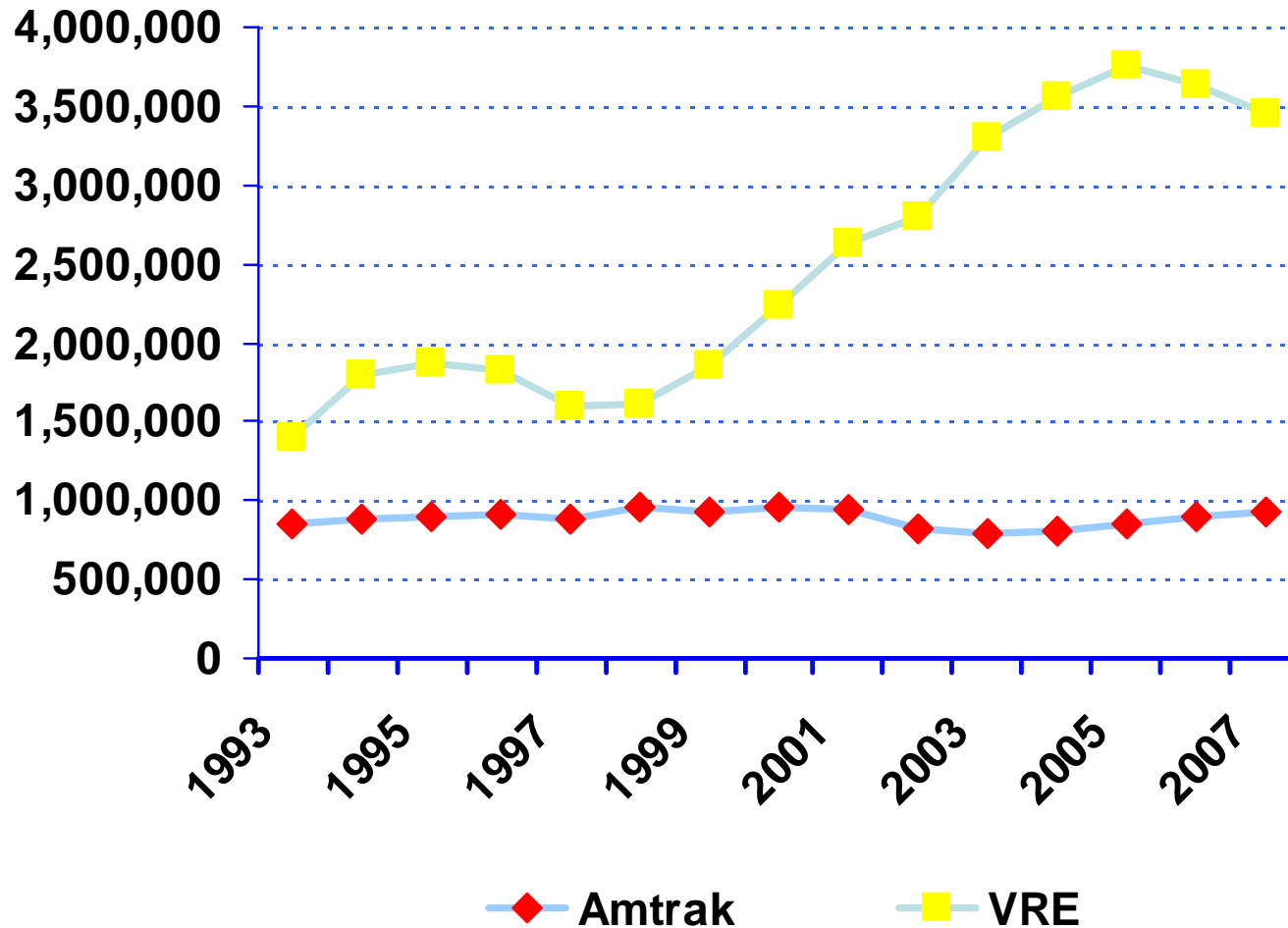
Mixed trains with different railcar types and products -- mostly north-south



Intermodal/Auto 16%

Containers, autos, other on railcars -- a future north-south opportunity

Annual Passenger Traffic (FY 1993-2007)



Setting the Stage

- ❑ The draft statewide rail plan builds on past successes to develop multimodal transportation corridors
- ❑ It is consistent with Commonwealth Transportation Policy Goals:
 - Providing a safe transportation system for Virginians
 - Maintaining existing transportation assets
 - Efficient and cost effective movement of people and goods
 - Stewardship of the environment
- ❑ It also supports the VTrans 2035 statewide transportation plan update

Setting the Stage

❑ Virginia rail funding

- The Rail Enhancement Fund provides approximately \$24 million for rail capital improvements annually
- Rail Enhancement funding was supplemented in 2007 by a 10-year, \$124.7 million bond program
- Rail Preservation funding for shortline railroads is available at approximately \$3 million annually
- Rail Industrial Access funding is available for businesses to connect to freight rail shipping through a shared fund at approximately \$5 million annually
- One-time funding for the I-95 and I-81 rail corridors has provided more than \$130 million to improve rail capacity and service reliability



Virginia has participated in the Heartland Corridor Project, a project of national significance that will support and enhance domestic and international trade, and remove 150,000 trucks from Virginia highways.

Four tunnels in Virginia are being cleared to accommodate double-stack rail traffic.



Virginia has allocated over \$151.55 million to help increase rail capacity and divert trucks to rail in the I-95 and I-81 corridors.

The new two-track Quantico Creek Bridge opened on Feb. 17, 2007 in the I-95 corridor.



Virginia has participated in the construction of an on-dock rail yard to support the first privately developed marine terminal in North America, APM Terminals Virginia, to move 128,500 containers annually in 2010.

A train carries double-stack rail containers from the port.

Setting the Stage

- ❑ Virginia faces a number of challenges:
 - Population growth
 - Outpacing the national average
 - Highway congestion
 - Northern Virginia is part of the second worst region in the country
 - Airline industry limitations
 - No direct connections between Virginia regions and cities
 - Cost prohibitive for travel within the state
 - Passenger and freight rail capacity/demand
 - Rail transportation is approaching the limits of capacity
 - Demand continues to rise
 - Port growth
 - One of the most significant economic engines of Virginia
 - More access to freight rail shipping is needed to accommodate the demand for imports and exports

Setting the Stage

❑ Understanding the freight rail business:

- The US is an international leader in freight rail, but lags behind in passenger rail.
- Freight rail is a very capital intensive industry. From 1995-2004, rail capital expenditures represented 18% of rail revenue compared to 4% for the average manufacturing company.
- Rail tracks in Virginia are privately owned by freight companies with a responsibility to return shareholder value.
- Freight rail is at least five times more profitable than passenger rail.
- Capacity is a commodity for private railroads, and railroads typically focus on capacity replacement (additional tracks) in exchange for access by commuter rail.
- Private railroads have the power to condemn property for necessary right of way.

Setting the Stage

- ❑ Understanding the passenger rail business:
 - Passenger rail typically requires a subsidy.
 - Amtrak, through federal statute, has the right to operate on freight rail lines.
 - Commuter rail operators like VRE do not have that right, and must negotiate with private railroads.
 - The cost of right of way is expensive.
 - VDOT estimates that the cost of acquiring right of way between Washington, DC and Richmond in the I-95 corridor would cost at least \$2 billion
 - Passenger rail operators have consistently chosen to access private rail lines rather than building dedicated passenger tracks.

Rail Benefits

- ❑ VRE service provides the equivalent capacity of one highway lane on I-95 and I-66 during peak periods.
- ❑ One intermodal train can carry up to 280 truck trailers.
- ❑ Train travel is 17% more energy efficient than domestic airline travel and 21% more energy efficient than auto travel.
- ❑ Traveling by rail contributes fewer greenhouse gas emissions than either cars or airplanes. Passenger rail emits only 0.2% of the travel industry's total greenhouse gases.

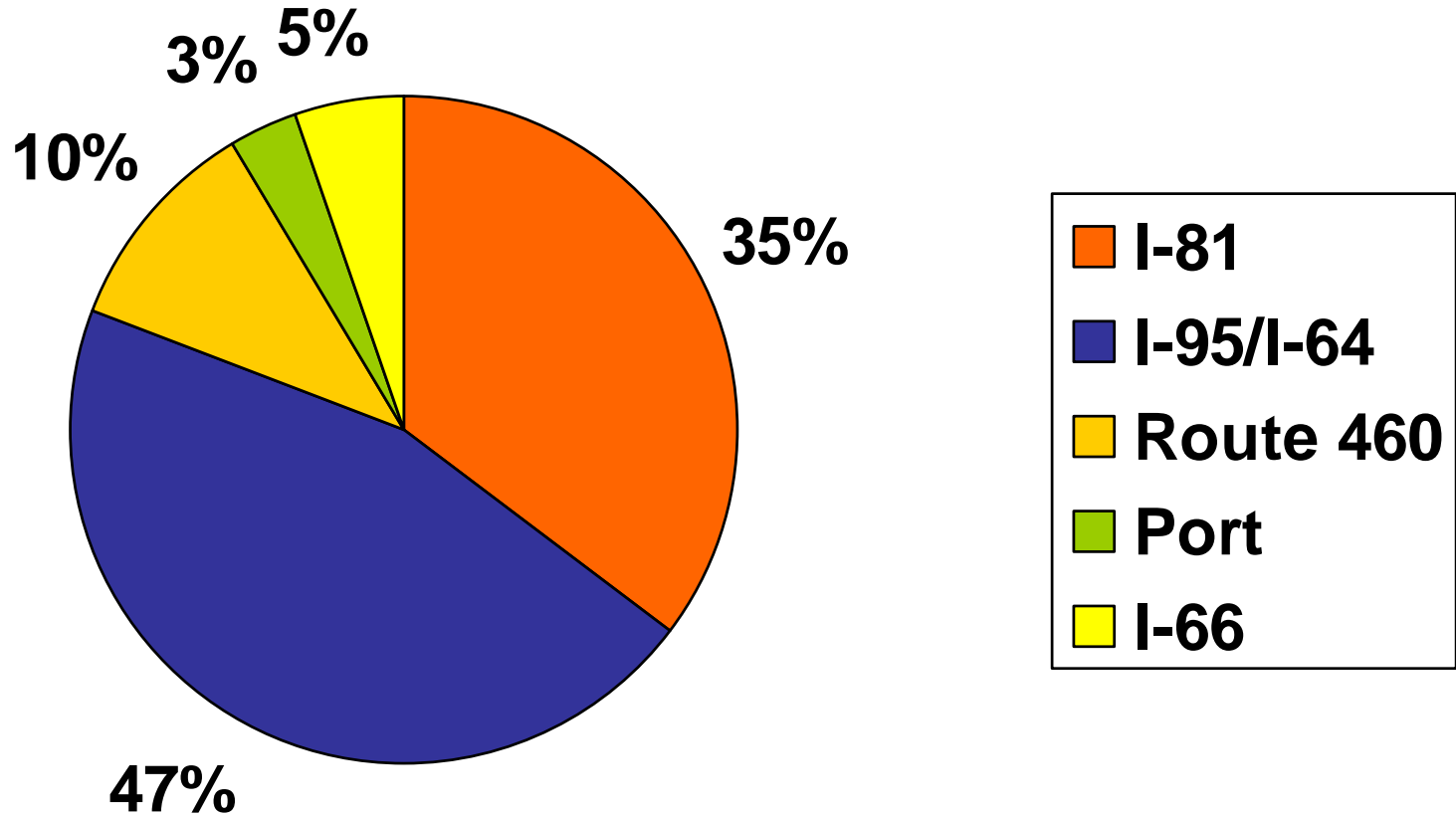
Proposed Improvements

- ❑ Projects identified in the draft Statewide Rail Plan will:
 - Focus on corridor management to support diverse needs
 - Provide improvements throughout the state
 - Position Virginia for future growth
 - Support growth at the Ports of Hampton Roads

Cost Assumptions

- ☐ Project cost estimates include capital costs only
- ☐ All costs are stated in 2008 dollars, without escalation to potential year of expenditure
- ☐ No operating or equipment costs are included- these will be identified in the Rail Action Plan
- ☐ The Rail Action Plan will include all costs and will have costs escalated based on year of expenditure

Rail Needs by Major Corridor



More than \$4.9 billion in needs statewide

Class I and Shortline Railroad Projects

Class I and Shortline Railroad Project Costs	
Project	Costs
National Gateway	\$48 million
Crescent Corridor	\$1.6 billion
Heartland Corridor	\$66.01 million
Coal Corridor	\$12.1 million
Shortline Railroads	\$68 million
Total Costs	\$ 1.8 billion

Class I and Shortline Project Results

- ❑ Improves freight rail shipping and diverts truck traffic to rail along Virginia highways: I-81, I-95, I-64, I-66, I-85, I-295, I-495 and Route 460, and outside Virginia along major routes such as I-20, I-40 and I-75
- ❑ Multistate agreements needed to maximize truck diversion
- ❑ Includes construction of rail yards and increases capacity
- ❑ Improves shortline rail systems in Virginia to accommodate heavier freight shipments and faster passenger rail service

CSX National Gateway Corridor (I-95, I-295, I-495)

- ❑ Parallels I-95 through Virginia
- ❑ Improves efficiency of freight rail shipping from ports of MD, VA and NC and to markets in PA, WV and OH
- ❑ Freight benefit: expands capacity, provides double-stack train clearances
- ❑ Passenger benefit: improves on-time performance
- ❑ Total project cost: \$48 million



Removes 130,000 trucks from I-95 Corridor



Saves over 31.9 million gallons of fuel



Saves 61,705 tons of CO₂ emissions

Norfolk Southern Crescent Corridor (I-81)

- ❑ Improves freight rail shipping along I-20, I-40, I-75, I-85 and I-81
- ❑ Freight benefit: expands capacity, diverting trucks from congested highways
- ❑ Passenger benefit: Could support expanded Amtrak service to Charlottesville, Lynchburg, Roanoke and Bristol, and expanded VRE service from Manassas to Haymarket
- ❑ Total project cost: \$1.6 billion



Removes 1.6 million trucks
(base estimate) from
I-81 Corridor by 2035



Saves over 227 million
gallons of fuel



Saves 674,000 tons of
CO₂ emissions

Norfolk Southern Heartland Corridor (US460) (Phase 1)

- ❑ Doubles freight capacity parallel to Route 460
- ❑ Freight benefit: cuts 1.5 days of shipping time between Hampton Roads and Chicago
- ❑ Passenger benefit: Could support expanded Amtrak service between Washington, DC and Bristol
- ❑ Planning has begun on Phase 2
- ❑ Total project cost: \$66.01 million



Removes 150,000 trucks from Virginia highways



Saves over 20.06 million gallons of fuel



Saves 55,804 tons of CO₂ emissions

Norfolk Southern Coal Corridor (US460)

- ❑ Adds additional track capacity parallel to Route 460 between Andover and Green Bay to support projected increases in coal shipments
- ❑ Freight benefit: Improves capacity to move coal from coal fields to Hampton Roads and to generating stations in TN, NC, SC and GA
- ❑ Passenger benefit: Could support expanded Amtrak service between Washington, DC and Bristol
- ❑ As most coal is already carried by rail, no calculations of truck diversion, fuel savings or reduced emissions have been conducted
- ❑ Total project cost: \$12.1 million

Shortline Railroad Preservation (statewide)

- ❑ Brings all shortline rail systems in Virginia up to Federal freight and passenger standards
- ❑ Freight benefit: Improves capacity to handle larger shipments, providing critical business-to-business link
- ❑ Passenger benefit: Improves Amtrak service between Orange and Clifton Forge
- ❑ Total project cost: \$68 million

Port Projects

- ❑ NIT Central Rail Yard Expansion
- ❑ Craney Island Rail Connection
- ❑ Norfolk/Portsmouth Beltline Railroad Improvements

Ports of Hampton Roads Project Costs	
Project	Costs
NIT Central Rail Yard Expansion	\$40.15 million
Craney Island Rail Connection	\$130 million
Norfolk Portsmouth Belt Line Railroad	\$8.75 million
Total Costs	\$178.9 million

Port Project Results

- ❑ Increases rail capacity and provides competitive port shipping services
- ❑ Diverts more port shipments from truck to rail to help manage highway congestion
- ❑ Supports the transport of up to 50% of projected containers at Craney Island
- ❑ Nearly doubles today's on-terminal rail handling capacity at Norfolk International Terminal
- ❑ Improves rail crossing safety

Norfolk International Terminal (NIT) Central Rail Yard Expansion

- ❑ Diverts port shipments from truck to rail
- ❑ Nearly doubles today's on-terminal rail handling capacity
- ❑ Total project cost: \$40.15 million



Removes 180,310 trucks from Virginia highways



Saves over 24.3 million gallons of fuel



Saves 47,072 tons of CO₂ emissions

Craney Island Rail Connection

- ❑ Three-phase project that builds on I-664/Route 164 Median Rail Safety Relocation Project
- ❑ Adds rail capacity to major new port facility
- ❑ Supports transport of approximately 50 percent of projected 1.43 million containers through this facility
- ❑ Total project cost: \$130 million



Removes 848,571 trucks from Virginia highways



Saves over 114 million gallons of fuel



Saves 221,528 tons of CO₂ emissions

Norfolk Portsmouth Belt Line Railroad Improvement

- ❑ Complementary to the NIT Central Rail Yard Expansion
- ❑ Adds off-site marshalling yard, separating highway traffic from train movements
- ❑ Improves operating efficiency of trains traveling to and from the on-terminal rail yard
- ❑ Total project cost: \$8.75 million



Eliminates 12.852 hours per year of delays (based on 18 train crossings per day) at an existing at-grade crossing at NIT and Hampton Boulevard

Passenger Rail Projects

Passenger Rail Project Costs	
Project	Costs
Commuter Rail Alexandria to Manassas	\$8.25 million
Commuter Rail Gainesville to Haymarket	\$281 million
Commuter Rail Fredericksburg to Washington, DC	\$470 million
Intercity Rail Urban Crescent	\$757 million
Intercity Rail TransDominion Express	\$206 million
Total Costs	\$ 1.7 billion

- ❑ Commuter Rail Improvements (I-66 and I-95):
 - VRE Alexandria to Manassas (I-66)
 - VRE Manassas to Gainesville/Haymarket Expansion (I-66)
 - VRE Fredericksburg to Washington, DC (third track)
- ❑ Intercity Rail:
 - Urban Crescent Express (I-64 and I-95)
 - TransDominion Express (TDX) (I-81 and Routes 29/460)

Passenger Rail Project Results

- ❑ Supports more frequent service in the Urban Crescent between Washington, DC, Richmond and Newport News
- ❑ Supports more frequent service in the Route 29 corridor between Lynchburg and Washington, DC, and implementation of Phase 1 of the TransDominion Express
- ❑ Supports expansion of VRE service between Manassas and Gainesville/Haymarket
- ❑ Supports new service, station improvements, travel time improvements and more frequent service along existing routes
- ❑ Upgrades track and other facilities/infrastructure for higher speed service

VRE Alexandria to Manassas (I-66)

- ❑ Upgrades track and improves the reliability of VRE operations by enabling increased train speed
- ❑ Total project cost: \$8.25 million



Removes 53,091 cars from
Virginia roadways



Saves over 24.3 million
gallons of fuel



Saves 47,072 tons of CO₂
emissions

VRE Manassas to Gainesville/Haymarket Expansion (I-66)

- ❑ Studies viability and potential locations of future passenger rail stations between Manassas and Gainesville/Haymarket
- ❑ Requires extensive upgrading of existing freight line for passenger rail service
- ❑ Next steps are additional environmental review and preliminary design
- ❑ Total project cost: \$281 million



Removes 430,556 cars from Virginia highways



Saves 1.7 million gallons of fuel



Saves 7,756 tons of CO₂ emissions

VRE Fredericksburg to Washington, DC Improvements (I-95, I-395, I-495)

- ❑ Expands rail service and improves existing service through signalization, station and rail infrastructure improvements, including:
 - Automatic train control cab signalization
 - VRE second platforms at Woodbridge, Lorton and Rippon Stations
 - Arkendale to Powell's Creek third track and station
 - Capacity improvements between Franconia/Springfield and Fredericksburg, excluding major bridges
- ❑ Total project cost \$470 million



Removes over 1.4 million cars from the I-95 corridor



Saves over 7.9 million gallons of fuel



Saves 46,877 tons of CO₂ emissions

Urban Crescent Express (I-64, I-95, I-295, Route 460)

- ❑ Freight and passenger rail improvements between Fredericksburg, Richmond and Newport News
- ❑ Station improvements, including the facilitation of transit-oriented development near stations
- ❑ Best passenger rail ridership increase opportunity in Commonwealth, potentially doubling Amtrak corridor ridership by 2015
- ❑ Total project cost: \$757 million



Removes over 1.3 million cars from Virginia highways



Saves over 9.5 million gallons of fuel



Saves 62,072 tons of CO₂ emissions

TransDominion Express (TDX) (I-81 and Routes 29/460)

- ❑ Enhances mobility along the Route 29, I-81 and Route 460 corridors by improving infrastructure to support higher speeds for passenger rail
- ❑ Phase I: Washington, DC to Lynchburg
- ❑ Phase II: Lynchburg to Roanoke
- ❑ Phase III: Roanoke to Bristol
- ❑ Phase IV: Lynchburg to Richmond
- ❑ Total project cost: \$206 million



Removes 53,091 cars from
I-81 and Route 29 corridors



Saves over 164,637
gallons of fuel



Saves 983 tons
of CO₂ emissions

High Speed Rail Project (I-95, I-295, I-495, I-85, I-64, Route 460)

High Speed Rail Project Costs	
Project	Costs
Southeast High Speed Rail Project	\$1.2 billion
Total Costs	\$1.2 billion

- ❑ High speed rail service between Washington, DC and Raleigh, NC
- ❑ Total cost does not include the cost of major river and stream crossings
- ❑ Total cost does not include the cost of electrification and improvements between Richmond and Washington, DC

Southeast High Speed Rail Project (I-95, I-295, I-495, I-85, I-64, Route 460)

- ❑ Studies higher speed rail connections between Hampton Roads and Richmond's Main Street Station to Washington, DC
- ❑ Also studies creating a high speed rail corridor between Washington, DC and Raleigh, NC
- ❑ Pending legislation in U.S. Congress could impact feasibility of program
- ❑ Total project cost: \$1.2 billion



Removes over 1.1 million cars from Virginia and North Carolina highways



Saves over 5.6 million gallons of fuel



Saves 33,713 tons of CO₂ emissions

Total Project Benefits

❑ Total public benefits of the potential projects are as follows:

- 7.3 million cars and trucks removed from highways
 - Approximately 108% of the total vehicle ownership in Virginia, based on vehicles registered in 2006
- 445 million gallons of fuel saved
 - Approximately 32 million barrels of oil imported to the US
- 1.2 million tons of carbon emissions saved
 - Equal to the emissions of approximately 7,000 automobiles per year

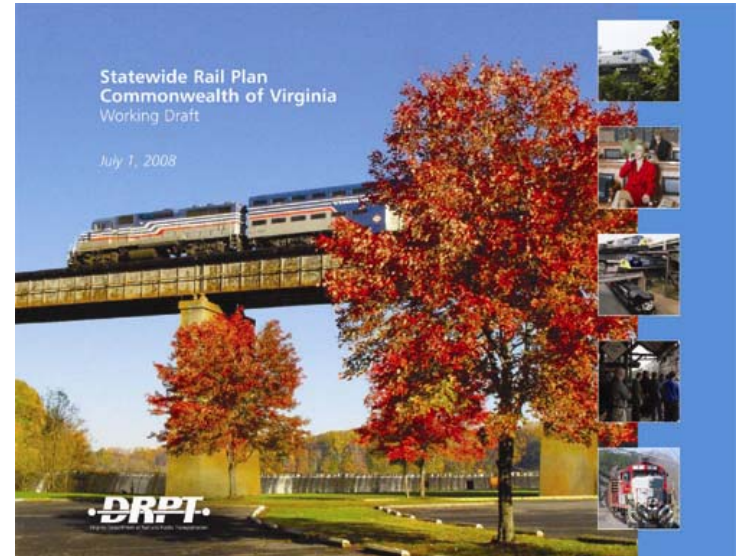
Project Funding

- ❑ Cost of all proposed projects is approximately \$5 billion, and current estimated revenue between 2009 and 2035 is \$1.3 billion
- ❑ Commonwealth's rail programs foster the sharing of costs and benefits
- ❑ Potential sources of funds:
 - Railroads
 - Commonwealth of Virginia, from dedicated funding sources as well as special allocations
 - Local jurisdictions, including current Northern Virginia contribution of 13 percent of VRE operating costs
 - Federal funding, including potential Amtrak bills that include state grants for intercity rail improvements
 - Passenger fares

Next Steps

□ Key Actions

- Draft Plan released for public comment in July 2008
 - Five public meetings statewide
 - Available online:
<http://www.drpt.virginia.gov>
- Rail Action Plan issued in September 2008
 - Includes funding strategies, proposed allocation of resources and project implementation schedules
 - Public comments accepted
- Statewide Rail Plan finalized in November 2008



□ Future Rail Plan Updates:

- Six Year Improvement Program yearly update
- Comprehensive update on a five-year basis as a part of VTrans



Virginia Department of Rail and Public Transportation

The Smartest Distance Between Two Points